M62 HILLTOP FARM

Leeds

Strata Geotechnics were appointed to conduct ground investigations to assess historic and ongoing drainage issues affecting the M62. The Hilltop Farm reservoir, which collects surface water runoff, had deteriorated due to silt build up and a failed spillway. Ground investigations are supporting essential improvements to restore functionality and ensure long-term sustainability.

PROJECT BACKGROUND

- Appointed by National Highways as PC.
- The scope of work included drilling 4No. boreholes up to 30m, collecting 2No. handheld window samples, conducting laboratory analysis, and performing pumping and assessment of an existing scour beneath the inlet. Post field monitoring was also carried out.

CHALLENGE

The project faced several access and safety challenges, including the lack of an access road for transporting plant, equipment, and materials; steep and slippery terrain leading to the dam crest; no direct access to the reservoir, and a collapsed spillway with unstable surroundings.

To address these issues, a heavy-duty trackway road and designated compound/laydown area were installed to ensure the safe movement of machinery and materials.

Modifications to the fencing included removing a section and installing a National Highways-specified gate for controlled access.

Terrain stabilisation was achieved by using a large excavator to add a stone layer, improving traction on steep slopes and reducing slip hazards.

The excavator also provided counterweight support during the transport of plant and equipment to prevent destabilisation.

Additionally, a bespoke scaffold was designed and installed along the dam face to provide rig access to the east side of the reservoir for investigative and remedial works.

SOLUTION

The team carried out a comprehensive ground investigation to assess subsurface conditions. This involved drilling 4No. boreholes to depths of up to 30m, taking 2No. handheld window samples to evaluate shallow ground conditions, and conducting laboratory analysis of selected soil samples to determine composition, contamination levels, and structural integrity.

AT A GLANCE

Sector: Infrastructure (Highways)

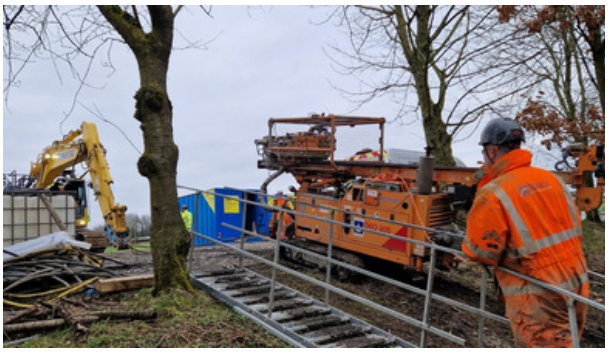
Solution: Ground Investigation

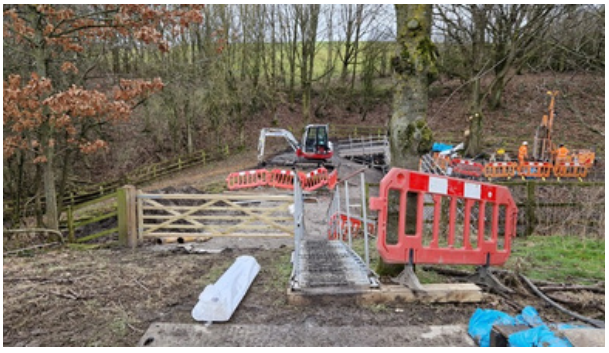
Techniques: Cable Percussion Drilling, Rotary Follow-on, Window Sampling and Post Field Monitoring

Client: National Highways

EQUIPMENT:

- Comacchio 205 Drilling Rig
- Handheld Modular Equipment
- 22T 360 Tracked Excavator
- 1T Digger





Additionally, the team conducted the pumping and assessment of an existing scour beneath the inlet to establish its size, depth, and volume.

To complete the works, the team utilised a Comacchio 205 drilling rig, handheld modular equipment, a 22-tonne 360 tracked excavator, and a 1-tonne digger, which was specifically used on top of the dam where conditions were unsuitable for larger plant machinery.

A submersible pump was deployed for plunge pool pumping, and a telescopic camera was used for detailed inspections.

Stabilisation measures were implemented to reduce hazards associated with steep terrain and unstable structures. Our improvement of the access to the site enabled the team to carry out the investigation efficiently and safely, while also facilitating future remedial works.

The data obtained from these investigations will support National Highways in developing appropriate design solutions for future remediation and further infrastructure planning.

Moving forward, we will be conducting a 12-month monitoring programme and providing geotechnical data to support the phased interventions necessary to ensure the long-term functionality and resilience of the reservoir.